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(71) Applicant *(for all designated States except US)*: **UNIVERSITÄT ZÜRICH** [CH/CH]; Rämistrasse 71, CH-8006 Zürich (CH).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **PLÜCKTHUN, Andreas** [DE/CH]; Möhrlistrasse 97, CH-8006 Zürich (CH). **ARNDT, Katja** [DE/US]; 559 A North Street, Oakland, CA 94609-1201 (US). **MÜLLER, Kristian** [DE/US]; 559 A North Street, Oakland, CA 94609-1201 (US). **PELLETIER, Joelle** [CA/CA]; Département de Chimie, Pavillon Principal, Université de Montréal, 2900 Edouard Montpetit, Montréal, Québec H3C 357 (CA).

(74) Agent: **VOSSIUS & PARTNER**; Siebertstrasse 4, D-81765 München (DE).

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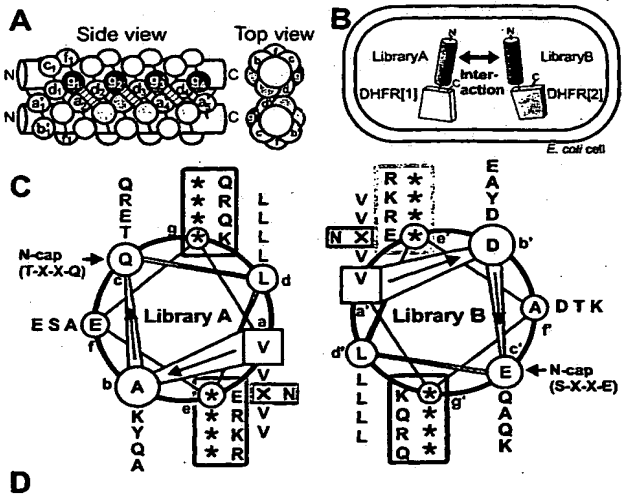
[Continued on next page]

(54) Title: HETERO-ASSOCIATING COILED-COIL PEPTIDES AND SCREENIGN METHOD THEREFOR



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	(occurrence)	e1	g1	e2	g2	a3	e3	g3	e4	g4	e'1	g'1	e'2	g'2	a'3	e'3	g'3	e'4	g'4
#1	(22x)	E	K	R	Q	N	K	R	R	Q	Q	E	Q	E	N	K	K	R	K
#2	(3x)	Q	K	R	R	N	K	E	E	K	E	E	K	Q	N	K	K	Q	Q
#3	(2x)	E	Q	Q	R	N	K	K	K	K	R	K	Q	E	N	E	E	Q	R
#4	(1x)	E	R	R	Q	N	K	K	E	Q	E	E	E	Q	N	Q	R	E	R
#5	(1x)	E	Q	E	E	N	K	K	R	R	K	K	K	K	N	R	K	R	K
#6	(3x)	Q	Q	E	Q	N	E	E	K	Q	R	Q	Q	K	N	R	R	K	R
#7	(2x)	E	R	K	E	N	E	E	K	R	Q	E	Q	Q	N	R	Q	K	K
#8	(1x)	E	K	K	K	N	K	K	K	K	R	Q	E	Q	N	E	Q	E	E
#9	(1x)	Q	E	Q	E	N	R	E	E	E	Q	K	K	E	N	Q	K	Q	R
#10	(1x)	R	R	R	R	N	Q	K	K	R	R	E	E	E	N	R	R	R	Q

(57) Abstract: The present invention relates to methods for the identification of novel hetero-associating coiled-coil peptides and uses of these peptides for hetero-dimerization of fusion proteins. It furthermore relates to vectors, host cells useful for the production of these novel hetero-association peptides and (poly)peptides/proteins comprising these peptides.

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INTERNATIONAL SEARCH REPORT

Int[redacted]nal Application No
PCT/EP 00/05922

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C12N15/10 G01N33/68 C07K14/00 A61K38/17

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C12N G01N C07K A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 98 34120 A (PELLETIER JOELLE NINA ;REMY INGRID (CA); UNIV MONTREAL (CA); MICHN) 6 August 1998 (1998-08-06) cited in the application the whole document ---	1-22
Y	YU Y ET AL: "INVESTIGATION OF ELECTROSTATIC INTERACTIONS IN TWO-STRANDED COILED-COILS THROUGH RESIDUE SHUFFLING" BIOPHYSICAL CHEMISTRY,AMSTERDAM,NL, vol. 59, 16 April 1996 (1996-04-16), pages 299-314, XP000971324 cited in the application the whole document ---	1-22

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[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

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"P" document published prior to the international filing date but later than the priority date claimed

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
4 January 2001	18/01/2001

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Smalt, R

Form PCT/ISA/210 (second sheet) (July 1992)

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	ARNDT K M ET AL: "In-vivo selection of interacting peptide libraries by selectively-infective phages." FASEB JOURNAL, vol. 11, no. 9, 1997, page A1327 XP002156485 17th International Congress of Biochemistry and Molecular Biology in conjunction with the Annual Meeting of the American Society for Biochemistry and Molecular Biology;San Francisco, California, USA; August 24-29, 1997 ISSN: 0892-6638 the whole document ---	
A	O'SHEA E K ET AL: "PEPTIDE 'VELCRO*': DESIGN OF A HETERODIMERIC COILED COIL" CURRENT BIOLOGY,GB,CURRENT SCIENCE,, vol. 3, no. 10, 1993, pages 658-667, XP000653001 ISSN: 0960-9822 cited in the application the whole document ---	
A	HODGES R S: "DE NOVO DESIGN OF ALPHA-HELICAL PROTEINS: BASIC RESEARCH TO MEDICALAPPLICATIONS" BIOCHEMISTRY AND CELL BIOLOGY. BIOCHIMIE ET BIOLOGIE CELLULAIRE,XX,XX, vol. 74, no. 2, 1996, pages 133-154, XP000605834 ISSN: 0829-8211 cited in the application the whole document ---	
A	JOHN MATTHIAS ET AL: "Two pairs of oppositely charged amino acids from Jun and Fos confer heterodimerization to GCN4 leucine zipper." JOURNAL OF BIOLOGICAL CHEMISTRY, vol. 269, no. 23, 1994, pages 16247-16253, XP002156486 ISSN: 0021-9258 cited in the application the whole document ---	
A	O'SHEA E K ET AL: "MECHANISM OF SPECIFICITY IN THE FOS-JUN ONCOPROTEIN HETERODIMER" CELL, vol. 68, no. 4, 1992, pages 699-708, XP002156487 ISSN: 0092-8674 cited in the application the whole document ---	
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
P,X	PELLETIER, J.N. ET AL.: "An in vivo library-versus-library selection of optimized protein-protein interactions." NATURE BIOTECHNOLOGY, vol. 17, July 1999 (1999-07), pages 683-90, XP002156488 the whole document	1-19,22
P,X	ARNDT KATJA M ET AL: "A heterodimeric coiled-coil peptide pair selected in vivo from a designed library-versus-library ensemble." JOURNAL OF MOLECULAR BIOLOGY, vol. 295, no. 3, 21 January 2000 (2000-01-21), pages 627-639, XP002156489 ISSN: 0022-2836 the whole document	1-19,22

Continuation of Box I.2

Present claim 8, and claims 10-13 and 15-22 in as far as they pertain to claim 8, relate to a polypeptide defined by reference to a desirable characteristic or property, namely that it can be obtained by the method of claim 7.
The claims cover all polypeptides having this characteristic or property, whereas the application provides support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT for only a very limited number of such polypeptides. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Independent of the above reasoning, the claims also lack clarity (Article 6 PCT). An attempt is made to define the product by reference to a result to be achieved. Again, this lack of clarity in the present case is such as to render a meaningful search over the whole of the claimed scope impossible. Consequently, the search has been carried out for those parts of the claims which appear to be clear, supported and disclosed, namely those parts relating to the polypeptides comprising domains as defined in claims 5 and/or 6, and in the broader sense those that fall under the general fomulae of claim 1(a) and (b).

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

INTERNATIONAL SEARCH REPORT

...orm... patent family members

Inte...al Application No
PCT/EP 00/05922

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9834120 A	06-08-1998	CA 2196496 A	31-07-1998
		AU 5850598 A	25-08-1998
		EP 0966685 A	29-12-1999